Journal of Nuclear Materials 178 (1991) 337–339
North-Holland

Author index

Al-Nakow, A.S., see Chirkin 178 (1991) 27
Axler, K.M., see Foltyn 178 (1991) 93

Badri Narayan, J., Quality assurance in a nuclear tubing mill 178 (1991) 125
Bairiot, H., P. Deramaix, N. Mostin, E. Trauwaert and Y. Vanderborck, Foundations for the definition of MOX fuel quality requirements 178 (1991) 187
Basak, U., see Ganguly 178 (1991) 179
Baumann, R., see Dams 178 (1991) 171
Bonnerot, J.M. and D. Warin, Automatic technique for simultaneous H_2 and H_2O titration in MOX fuels 178 (1991) 254
Bouguerra, Y. and A. Si-Ahmed, A model for predicting evolution of pore size distributions in UO_2 fuel 178 (1991) 300
Brennenstuhl, A., see McIntyre 178 (1991) 80

Celora, J., see Marajofsky 178 (1991) 143
Chirkin, A.V., A.S. Al-Nakow and S.M. Sherif, The metallographic revealing of twin formation in Zr–Nb industrial alloys 178 (1991) 27
Choi, M.S. and M.S. Yang, Quality evaluation and control of end cap welds in PHWR fuel elements by ultrasonic examination 178 (1991) 321
Cromboom, O., L. Koch and R. Wellum, The determination of uranium and plutonium in fuel materials by titration and by K-edge absorption 178 (1991) 249

Dams, W., R. Baumann, I. Hanel, B. Happ and L. Heins, Fabrication of UO_2 fuels with non-destructive assay and rod scanner technology for production and final quality control 178 (1991) 171
Davidson, R.D., see McIntyre 178 (1991) 80
Deramaix, P., see Bairiot 178 (1991) 187
Derepovskij, N.T., see Zelenskij 178 (1991) 99
Dianshan, C., see Rixin 178 (1991) 227
Dubinko, V.I., The influence of dislocation structure and impurities on the void lattice formation in crystals under irradiation 178 (1991) 108
Dubrovin, K.P., E.G. Ivanov, P.N. Strijov and V.V. Yakovlev, The results of postirradiation examinations of VVER-1000 and VVER-440 fuel rods 178 (1991) 306
Durazzo, M., see Riella 178 (1991) 204
Durmazuçar, H.H., see Gündüz 178 (1991) 212

Erko, V.F., see Zelenskij 178 (1991) 99
Espinoza, J.M., see Foltyn 178 (1991) 93

Foltyn, E.M., R.N.R. Mulford, K.M. Axler, J.M. Espinoza and A.M. Murray, Thermodynamic modeling and experimental investigations of the $CsCl–CaCl_2–PuCl_3$ system 178 (1991) 93

Ganguly, C. and U. Basak, Fabrication of high density UO_2 fuel pellets involving sol–gel microsphere pelletisation and low temperature sintering 178 (1991) 179
Ganguly, C., P.V. Hegde and A.K. Sengupta, Preparation, characterisation and out-of-pile property evaluation of (U,Pu)N fuel pellets 178 (1991) 234
Grigoriadi, I.P., see Livshits 178 (1991) 1
Gritsyna, V.I., see Zelenskij 178 (1991) 99
Groß, H., see Heins 178 (1991) 287
Guery, M., Some applications of gamma absorptiometry and spectrometry for the control of nuclear materials 178 (1991) 266
Güldner, R. and H. Schmidt, Optimization of process parameters for the sintering of MOX fuel 178 (1991) 152
Gündüz, G., I. Önal and H.H. Durmazuçar, Pore size distributions in uranium dioxide and uranium dioxide–gadolinium oxide fuel kernel produced by sol–gel technique 178 (1991) 212

Hale, J.M., see Walton 178 (1991) 245
Hanel, I., see Dams 178 (1991) 171
Happ, B., see Dams 178 (1991) 171
Hegde, P.V., see Ganguly 178 (1991) 234
Heinisch, H.L., Correlation of mechanical property changes in neutron-irradiated pressure vessel steels on the basis of spectral effects 178 (1991) 19
Heins, L., see Dams 178 (1991) 171
Heins, L., H. Groß, K. Nissen and F. Wunderlich, Statistical analysis of QC data and estimation of fuel rod behaviour 178 (1991) 287
Hirata, M., see Riella 178 (1991) 204

Imakuma, K., see Teixeira 178 (1991) 33
Ivanov, E.G., see Dubrovin 178 (1991) 306

Kobiyama, M., see Nakata 178 (1991) 40
Koch, L., see Cromboom 178 (1991) 249

Krompaß, R., see Steinkopff 178 (1991) 163

Lainetti, P. and H.G. Riella, Preparation of ceramic grade UO_2 powder by atomization from uranyl nitrate solutions 178 (1991) 135
Lee, Y.W. and M.S. Yang, Characterization of HWR fuel pellets fabricated using UO_2 powders from different conversion processes 178 (1991) 217
Livshits, A.I., M.E. Notkin, A.A. Samartsev and I.P. Grigoriadi, Large-scale effects of H_2O and O_2 on the absorption and permeation in Nb of energetic hydrogen particles 178 (1991) 1
Lucuta, P.G., R.A. Verrall, Hj. Matzke and B.J. Palmer, Microstructural features of SIMFUEL – Simulated high-burnup UO_2-based nuclear fuel 178 (1991) 48

Mainy, P. and C. Morin, Fuel rod enrichment determination by gamma scanning 178 (1991) 261
Mainy, P., see Senevat 178 (1991) 315
Malik, G.N., see Zelenskij 178 (1991) 99
Marajofsky, A., L. Perez and J. Celora, On the dependence of characteristics of powders on the AUC process parameters 178 (1991) 143
Matzke, Hj., see Lucuta 178 (1991) 48
Mayuzumi, M. and T. Onchi, The applicability of the strain-hardening rule to creep deformation of Zircaloy fuel cladding tube under dry storage condition 178 (1991) 73
McIntyre, N.S., C.G. Weisener, R.D. Davidson, A. Brennenstuhl and B. Warr, Analysis of Zr–Nb fuel channel surfaces for hydrogen and other elements using Secondary Ion Mass Spectrometry (SIMS) 178 (1991) 80
Moalem, M. and D.R. Olander, The high-temperature solubility of hydrogen in pure and oxygen-containing Zircaloy 178 (1991) 61
Morin, C., see Mainy 178 (1991) 261
Mostin, N., see Bairiot 178 (1991) 187
Mühling, G., see Nocetti 178 (1991) 158
Mulford, R.N.R., see Foltyn 178 (1991) 93
Murray, A.M., see Foltyn 178 (1991) 93

Nakata, K., S. Takamura and M. Kobiyama, Recovery of yield stress in dilute Ni alloys after electron and neutron irradiations at low temperatures 178 (1991) 40
Neklyudov, I.M., see Zelenskij 178 (1991) 99
Nissen, K., see Heins 178 (1991) 287
Nocetti, C.A., J.G. Rodriguez and G. Mühling, Quality control in the fabrication of prototype nuclear fuel in Mexico 178 (1991) 158
Nogueira, R.A., see Riella 178 (1991) 204
Notkin, M.E., see Livshits 178 (1991) 1

Olander, D.R., see Moalem 178 (1991) 61
Önal, I., see Gündüz 178 (1991) 212
Onchi, T., see Mayuzumi 178 (1991) 73

Palmer, B.J., see Lucuta 178 (1991) 48
Perez, L., see Marajofsky 178 (1991) 143
Platonov, P.V., see Zelenskij 178 (1991) 99

Riella, H.G., see Lainetti 178 (1991) 135
Riella, H.G., M. Durazzo, M. Hirata and R.A. Nogueira, UO_2–Gd_2O_3 solid solution formation from wet and dry processes 178 (1991) 204
Rixin, K., Z. Shucheng and C. Dianshan, A comprehensive in-pile test of PWR fuel bundle 178 (1991) 227
Rodriguez, J.G., see Nocetti 178 (1991) 158
Rybalko, V.F., see Zelenskij 178 (1991) 99

Samartsev, A.A., see Livshits 178 (1991) 1
Schmidt, H., see Güldner 178 (1991) 152
Senevat, J. and P. Mainy, Eddy current examination technique during manufacturing of Zircaloy-4 fuel cladding tubes 178 (1991) 315
Sengupta, A.K., see Ganguly 178 (1991) 234
Sherif, S.M., see Chirkin 178 (1991) 27
Shucheng, Z., see Rixin 178 (1991) 227
Si-Ahmed, A., see Bouguerra 178 (1991) 300
Steinbock, L., Transmission tomography of nuclear fuel pins and bundles with an electronic line camera system 178 (1991) 277
Steinkopff, H. and R. Krompaß, Automatic refabrication and quality control of fuel elements for the BOR-60 reactor in the USSR 178 (1991) 163
Stoll, W., Quality and human society 178 (1991) 117
Strasser, A.A., Nuclear fuel quality control – What is missing? 178 (1991) 331
Strijov, P.N., see Dubrovin 178 (1991) 306

Takamura, S., see Nakata 178 (1991) 40
Teixeira, S.R. and K. Imakuma, High temperature X-ray diffraction study of the U_4O_9 formation on UO_2 sintered plates 178 (1991) 33
Trauwaert, E., see Bairiot 178 (1991) 187
Tsupko-Sitnikov, M.V., RIT – A new robust iterative technique for image reconstruction in emission tomography 178 (1991) 274

Une, K., see Yuda 178 (1991) 195

Vanderborck, Y., see Bairiot 178 (1991) 187
Verrall, R.A., see Lucuta 178 (1991) 48
Voevodin, V.N., see Zelenskij 178 (1991) 99
Vollath, D., Determination of the distribution of the largest Pu-rich particles in the pellets of a batch 178 (1991) 296

Walton, H. and J.M. Hale, On-line measurement of oxide fuel pellets for process control 178 (1991) 245

Warin, D., see Bonnerot 178 (1991) 254
Warr, B., see McIntyre 178 (1991) 80
Weisener, C.G., see McIntyre 178 (1991) 80
Wellum, R., see Cromboom 178 (1991) 249
Wunderlich, F., see Heins 178 (1991) 287

Yakovlev, V.V., see Dubrovin 178 (1991) 306
Yang, M.S., see Lee 178 (1991) 217
Yang, M.S., see Choi 178 (1991) 321
Yuda, R. and K. Une, Effect of sintering atmosphere on the densification of UO_2–Gd_2O_3 compacts 178 (1991) 195

Zelenskij, V.F., I.M. Neklyudov, V.N. Voevodin, V.I. Gritsyna, N.T. Derepovskij, V.F. Erko, G.N. Malik, P.V. Platonov and V.F. Rybalko, The influence of pulsed plasma jet irradiation on the mechanical properties of KH16N15M3B and KH18N10T austenitic stainless steels 178 (1991) 99

Journal of Nuclear Materials 178 (1991) 341–344
North-Holland

Subject index

For pages 1–114

Analytical Instruments And Methods

Analysis of Zr–Nb fuel channel surfaces for hydrogen and other elements using Secondary Ion Mass Spectrometry (SIMS), N.S. McIntyre, C.G. Weisener, R.D. Davidson, A. Brennenstuhl and B. Warr 178 (1991) 80

Cladding Materials

The applicability of the strain-hardening rule to creep deformation of Zircaloy fuel cladding tube under dry storage condition, M. Mayuzumi and T. Onchi 178 (1991) 73

Computer Calculations, incl. Modelling

Thermodynamic modeling and experimental investigations of the $CsCl$–$CaCl_2$–$PuCl_3$ system, E.M. Foltyn, R.N.R. Mulford, K.M. Axler, J.M. Espinoza and A.M. Murray 178 (1991) 93

The influence of dislocation structure and impurities on the void lattice formation in crystals under irradiation, V.I. Dubinko 178 (1991) 108

Creep and Relaxation

The applicability of the strain-hardening rule to creep deformation of Zircaloy fuel cladding tube under dry storage condition, M. Mayuzumi and T. Onchi 178 (1991) 73

Crystallographic Properties

High temperature X-ray diffraction study of the U_4O_9 formation on UO_2 sintered plates, S.R. Teixeira and K. Imakuma 178 (1991) 33

Defects and Defect Structures

Recovery of yield stress in dilute Ni alloys after electron and neutron irradiations at low temperatures, K. Nakata, S. Takamura and M. Kobiyama 178 (1991) 40

The influence of dislocation structure and impurities on the void lattice formation in crystals under irradiation, V.I. Dubinko 178 (1991) 108

Diffusion *(incl. Thermodiffusion)*

High temperature X-ray diffraction study of the U_4O_9 formation on UO_2 sintered plates, S.R. Teixeira and K. Imakuma 178 (1991) 33

Fabrication

The metallographic revealing of twin formation in Zr–Nb industrial alloys, A.V. Chirkin, A.S. Al-Nakow and S.M. Sherif 178 (1991) 27

Fuels and Fuel Elements

Microstructural features of SIMFUEL – Simulated high-burnup UO_2-based nuclear fuel, P.G. Lucuta, R.A. Verrall, Hj. Matzke and B.J. Palmer 178 (1991) 48

Analysis of Zr–Nb fuel channel surfaces for hydrogen and other elements using Secondary Ion Mass Spectrometry (SIMS), N.S. McIntyre, C.G. Weisener, R.D. Davidson, A. Brennenstuhl and B. Warr 178 (1991) 80

Fusion Reactors

The influence of pulsed plasma jet irradiation on the mechanical properties of KH16N15M3B and KH18N10T austenitic stainless steels, V.F. Zelenskij, I.M. Neklyudov, V.N. Voevodin, V.I. Gritsyna, N.T. Derepovskij, V.F. Erko, G.N. Malik, P.V. Platonov and V.F. Rybalko 178 (1991) 99

Gases *(excl. Tritium)* **in Metals, Alloys and Ceramics**

Large-scale effects of H_2O and O_2 on the absorption and permeation in Nb of energetic hydrogen particles, A.I. Livshits, M.E. Notkin, A.A. Samartsev and I.P. Grigoriadi 178 (1991) 1

Hydrogen and Hydrides *(incl. Deuterium and Deuterides)*

Large-scale effects of H_2O and O_2 on the absorption and permeation in Nb of energetic hydrogen particles, A.I. Livshits, M.E. Notkin, A.A. Samartsev and I.P. Grigoriadi 178 (1991) 1

The high-temperature solubility of hydrogen in pure and oxygen-containing Zircaloy, M. Moalem and D.R. Olander 178 (1991) 61
Analysis of Zr–Nb fuel channel surfaces for hydrogen and other elements using Secondary Ion Mass Spectrometry (SIMS), N.S. McIntyre, C.G. Weisener, R.D. Davidson, A. Brennenstuhl and B. Warr 178 (1991) 80

Irradiation Effects *(excl. Swelling and Voids)*

Large-scale effects of H_2O and O_2 on the absorption and permeation in Nb of energetic hydrogen particles, A.I. Livshits, M.E. Notkin, A.A. Samartsev and I.P. Grigoriadi 178 (1991) 1
Correlation of mechanical property changes in neutron-irradiated pressure vessel steels on the basis of spectral effects, H.L. Heinisch 178 (1991) 19
Recovery of yield stress in dilute Ni alloys after electron and neutron irradiations at low temperatures, K. Nakata, S. Takamura and M. Kobiyama 178 (1991) 40
Microstructural features of SIMFUEL – Simulated high-burnup UO_2-based nuclear fuel, P.G. Lucuta, R.A. Verrall, Hj. Matzke and B.J. Palmer 178 (1991) 48

Kinetics

High temperature X-ray diffraction study of the U_4O_9 formation on UO_2 sintered plates, S.R. Teixeira and K. Imakuma 178 (1991) 33

Mechanical Properties *("Various", i.e. not listed elsewhere by name)*

Correlation of mechanical property changes in neutron-irradiated pressure vessel steels on the basis of spectral effects, H.L. Heinisch 178 (1991) 19
Recovery of yield stress in dilute Ni alloys after electron and neutron irradiations at low temperatures, K. Nakata, S. Takamura and M. Kobiyama 178 (1991) 40
The influence of pulsed plasma jet irradiation on the mechanical properties of KH16N15M3B and KH18N10T austenitic stainless steels, V.F. Zelenskij, I.M. Neklyudov, V.N. Voevodin, V.I. Gritsyna, N.T. Derepovskij, V.F. Erko, G.N. Malik, P.V. Platonov and V.F. Rybalko 178 (1991) 99

Microstructure *(incl. Textures)*

The metallographic revealing of twin formation in Zr–Nb industrial alloys, A.V. Chirkin, A.S. Al-Nakow and S.M. Sherif 178 (1991) 27
Microstructural features of SIMFUEL – Simulated high-burnup UO_2-based nuclear fuel, P.G. Lucuta, R.A. Verrall, Hj. Matzke and B.J. Palmer 178 (1991) 48

Nickel and Nickel Alloys

Recovery of yield stress in dilute Ni alloys after electron and neutron irradiations at low temperatures, K. Nakata, S. Takamura and M. Kobiyama 178 (1991) 40

Niobium and Niobium Alloys

Large-scale effects of H_2O and O_2 on the absorption and permeation in Nb of energetic hydrogen particles, A.I. Livshits, M.E. Notkin, A.A. Samartsev and I.P. Grigoriadi 178 (1991) 1

Permeation

Large-scale effects of H_2O and O_2 on the absorption and permeation in Nb of energetic hydrogen particles, A.I. Livshits, M.E. Notkin, A.A. Samartsev and I.P. Grigoriadi 178 (1991) 1

Phase Transformation

High temperature X-ray diffraction study of the U_4O_9 formation on UO_2 sintered plates, S.R. Teixeira and K. Imakuma 178 (1991) 33

Plutonium, Plutonium Alloys and Compounds

Thermodynamic modeling and experimental investigations of the $CsCl$–$CaCl_2$–$PuCl_3$ system, E.M. Foltyn, R.N.R. Mulford, K.M. Axler, J.M. Espinoza and A.M. Murray 178 (1991) 93

Pressure Vessels

Correlation of mechanical property changes in neutron-irradiated pressure vessel steels on the basis of spectral effects, H.L. Heinisch 178 (1991) 19

Steels

Correlation of mechanical property changes in neutron-irradiated pressure vessel steels on the basis of spectral effects, H.L. Heinisch 178 (1991) 19
The influence of pulsed plasma jet irradiation on the mechanical properties of KH16N15M3B and KH18N10T austenitic

stainless steels, V.F. Zelenskij, I.M. Neklyudov, V.N. Voevodin, V.I. Gritsyna, N.T. Derepovskij, V.F. Erko, G.N. Malik, P.V. Platonov and V.F. Rybalko 178 (1991) 99

Thermal Reactors

Microstructural features of SIMFUEL – Simulated high-burnup UO_2-based nuclear fuel, P.G. Lucuta, R.A. Verrall, Hj. Matzke and B.J. Palmer 178 (1991) 48

Thermodynamic Properties

Thermodynamic modeling and experimental investigations of the $CsCl–CaCl_2–PuCl_3$ system, E.M. Foltyn, R.N.R. Mulford, K.M. Axler, J.M. Espinoza and A.M. Murray 178 (1991) 93

Uranium Ceramics

High temperature X-ray diffraction study of the U_4O_9 formation on UO_2 sintered plates, S.R. Teixeira and K. Imakuma 178 (1991) 33

Microstructural features of SIMFUEL – Simulated high-burnup UO_2-based nuclear fuel, P.G. Lucuta, R.A. Verrall, Hj. Matzke and B.J. Palmer 178 (1991) 48

Zirconium, Zirconium Alloys and Compounds

The metallographic revealing of twin formation in Zr–Nb industrial alloys, A.V. Chirkin, A.S. Al-Nakow and S.M. Sherif 178 (1991) 27

The high-temperature solubility of hydrogen in pure and oxygen-containing Zircaloy, M. Moalem and D.R. Olander 178 (1991) 61

The applicability of the strain-hardening rule to creep deformation of Zircaloy fuel cladding tube under dry storage condition, M. Mayuzumi and T. Onchi 178 (1991) 73

Analysis of Zr–Nb fuel channel surfaces for hydrogen and other elements using Secondary Ion Mass Spectrometry (SIMS), N.S. McIntyre, C.G. Weisener, R.D. Davidson, A. Brennenstuhl and B. Warr 178 (1991) 80

For pages 115–335: Proceedings of the Fourth International Conference on Characterization and Quality Control of Nuclear Fuels, Karlsruhe, Federal Republic of Germany, June 19–21, 1990

Accuracy 254
ADU powder 143, 204, 217
Agglomeration 135, 296
Atomization 135
AUC powder 135, 143, 171, 204, 217, 227
AUPuC process 152, 187
Autoradiography 296

BET surface 135, 143, 204, 217
Boron carbide 266
Bulk density 135, 143, 152, 217
Burnable poison 287
Burnup 187, 300, 306

Calcination 135, 227
Capacitance transducer 245
Carbothermic reduction 234
Ceramic grade UO_2 135
Chipping 331
Circumferential cracking 321
Cladding 287, 306
Compatibility 234
Coprecipitation process 204
Cracking 331

Denitration 135
Densification 300
Density 135, 143, 152, 158, 163, 179, 187, 195, 204, 217, 261, 287
Diametral measurement 245
Diffusion 152, 195, 212, 254, 300
Dilatometry 195
Dimensional stability 245

Eddy current 135, 315
Emission tomography 274
End plug 163, 171, 187, 321
Enrichment 171, 261
Expulsion defect 321

Fission gas 227, 261, 287, 306, 331
Fission spike 300
Fuel bundle 227, 277, 321
Fuel element 163, 187, 274
Fuel rods 163, 171, 187, 227, 234, 261, 266, 277, 287, 306, 331
Fuel temperature 287

Gamma absorptiometry 266
Gamma scanner 171, 261
Gamma spectrometry 266
Gd_2O_3 204, 212, 296
Grain size 179, 217
Graphite 234
Grinding swarf 135, 171

Hardness 234
HNO_3 135, 187, 249
Human society 117
Hydrogen analysis 254, 331

Irradiation conditions 306

K-edge absorption 249

Lattice parameter 212

Mercury porosimetry 135, 143, 212, 217
Micro fissure 321
Microspheres 179, 234
Microstructure 152, 179, 195, 234, 300, 306, 321
Microwave denitration 135
Moisture 152, 227
Monte Carlo calculations 287
MOX fuel 152, 187, 254

NIKUSI process 152
Nitric acid 135, 249
Nozzle 135, 179

OCOM 152
O/M ratio 152, 204
Open pore volume 135, 195
Optimization 152

Particle size 135, 152, 163, 187, 212, 296
Pellet 152, 212, 296
Pilot plant 135
Plutonium 187, 249, 296
Plutonium determination 249
Pore diameter 143, 212, 300
Pore former 234
Pore size 143, 179, 195, 212, 300
Pore volume 135, 143, 195, 217, 300
Porosity 143, 179, 217, 234, 254, 300
Post irradiation examination 227, 306, 331
Potentiometric titration 249
Probabilistic methods 287
Process control 245
Procurement 125
Product certification 125
Product qualification 125
PuO_2 particles 187, 296
PuO_2 powder 152, 187

Quality 117, 261
Quality assurance 125, 171
Quality control 158, 163, 171, 187, 261, 331
Quality organization 125

Redox titration 249
Resinter test 217, 300
Response surface 287
Rod scanner 171
RRS distribution 227

Safety science 117
Sinogram 277
Sintering 143, 152, 179, 187, 195, 204, 212, 234
Sintering kinetics 195
Size distribution 296, 331
Sol–gel technique 179, 212, 234
Specific surface area 135, 143, 212
Statistical analysis 287
Statistical distribution 287
Statistics of extremes 296

Thermal conductivity 234
Thermal decomposition 135
Thorium nitrate 135
TiO_2 doping 179
Tomato salad problem 296
Tomography 274, 277
Transmission tomography 277
Tube 125, 315
Tubing mill 125

(U, Pu)N 234
UF_6 135, 143, 171, 187
Ultrasonic examination 315, 321
UO_2 135, 152, 158, 171, 179, 187, 195, 212, 306
U_3O_8 135, 143, 171
UO_2–G_2O_3 fuel 179, 195, 204, 212
UO_2 pellet 135, 158, 171, 179, 187, 217, 227, 261
UO_2 powder 135, 152, 158, 171, 187, 204, 217
UO_2–PuO_2 163, 254, 261
Uranium 249
Uranyl nitrate 135, 143, 179, 204, 212

Vacancy diffusion 300
Vibrocompaction 163

Water analysis 254
Water chemistry 227
Welding 163, 171, 187, 227, 321

X-ray diffraction 195, 204, 212, 234
X-ray fluorescence 171

Zircaloy 187, 217, 227, 315, 321, 331